

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) An isolated or purified nucleic acid molecule ~~consisting essentially of a nucleotide sequence encoding human brother of regulator of imprinted sites (BORIS) or a fragment thereof comprising at least 1536 contiguous nucleotides~~ comprising a nucleic acid sequence that encodes SEQ ID NO: 2.

2. (Currently Amended) The isolated or purified nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises SEQ ID NO: 1 ~~which (i) encodes the amino acid sequence of SEQ ID NO: 2 or a fragment thereof comprising at least 307 contiguous amino acids, (ii) consists essentially of the nucleotide sequence of SEQ ID NO: 1 or a fragment thereof comprising at least 1536 contiguous nucleotides, (iii) hybridizes under highly stringent conditions to an isolated or purified nucleic acid molecule consisting essentially of the nucleotide sequence that is complementary to SEQ ID NO: 1 or a fragment thereof, or (iv) shares 45% or more identity with SEQ ID NO: 1.~~

3.-8. (Cancelled)

9. (Original) A vector comprising the isolated or purified nucleic acid molecule of claim 1.

10.-12. (Cancelled)

13. (Currently Amended) A An isolated cell comprising the vector of claim 9.

14.-22.

23. (Currently Amended) A method of diagnosing a cancer or a predisposition to a cancer in a male mammal, ~~which~~ wherein said method comprises detecting ~~either (i) a nucleic acid molecule comprising a nucleotide sequence encoding BORIS or (ii) a polypeptide molecule comprising an amino acid sequence encoding BORIS~~ SEQ ID NO: 1 in a test sample comprising somatic cells obtained from the male mammal, wherein the detection of ~~(i) or (ii) the~~ nucleic acid molecule comprising SEQ ID NO: 1 in the test sample is indicative of the cancer or a predisposition to the cancer in the male mammal.

24.-41. (Cancelled)

42. (New) A vector comprising the isolated or purified nucleic acid molecule of claim 2.

43. (New) An isolated cell comprising the vector of claim 42.

44. (New) The method of claim 23, wherein the cancer is breast cancer.

45. (New) The method of claim 23, wherein the cancer is endometrial cancer.

46. (New) The method of claim 23, wherein the test sample comprises somatic cells.

47. (New) The method of claim 23, wherein the test sample comprises blood.

48. (New) The method of claim 23, wherein detecting a nucleic acid comprising SEQ ID NO: 1 comprises the use of Southern blot, Northern blot, in situ hybridization, or microarray analysis.

49. (New) The method of claim 23, wherein detecting a nucleic acid comprising SEQ ID NO: 1 comprises the use of PCR or RT-PCR.

50. (New) A method of detecting expression of a nucleic acid sequence encoding SEQ ID NO: 2 in a mammal, which method comprises:

- (a) contacting a test sample from the mammal with a nucleic acid molecule that specifically binds to the isolated or purified nucleic acid molecule of claim 1, and
- (b) detecting hybridization of the nucleic acid molecule used in step (a) to a nucleic acid molecule of the test sample, wherein hybridization indicates expression of a nucleic acid molecule encoding SEQ ID NO: 2.

51. (New) The method of claim 50, wherein the nucleic acid molecule used in step (a) is attached to a label.

52. (New) The method of claim 51, wherein the label is a fluorescent label or an enzyme tag.

53. (New) The method of claim 50, wherein detecting hybridization comprises the use of Southern blot, Northern blot, in situ hybridization, or microarray analysis.

54. (New) The method of claim 50, wherein detecting hybridization comprises the use of PCR or RT-PCR.

55. (New) The method of claim 50, wherein the test sample comprises somatic cells.

56. (New) The method of claim 50, wherein the test sample comprises blood.

57. (New) The method of claim 50, wherein the nucleic acid that specifically binds to an isolated or purified nucleic acid of claim 1 comprises a nucleic acid sequence that is complementary to SEQ ID NO: 1.